Abbingdon Music Research

AM-77 Reference Class

Dual-Mono Pre-Main Amplifier

Owner's Manual

‘All the Music Recreated’

WARNINGS

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying this component.

This component weighs over 40 kilograms. Do not place this component on an unstable cart, stand, tripod, bracket or table as the component may fall causing serious injury to a child or adult and serious damage to the unit. An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the component and cart combination to overturn.

Any mounting of the device on a wall or ceiling should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.

Read and follow all the safety and operating instructions before connecting or using this component.

All warnings on the component and in its operating instructions should be adhered to.

Retain this Owner's Manual for future reference.

Do not use this unit near water; for example, near a bath tub, washbowl, kitchen sink, laundry tub, in a wet basement or near a swimming pool.

Unplug the component from the wall outlet before cleaning. Never use benzine, thinner or other solvents for cleaning; use only a soft damp cloth.

Care should be taken so that objects do not fall, and liquids are not spilled into the enclosure through any openings.

This component should be serviced only by qualified AMR service personnel when:

A. The power cable or the power input socket has been damaged;

B. Objects have fallen, or liquid has been spilled into the component;

C. The component has been exposed to rain or liquids of any kind;

D. The component does not appear to operate normally or exhibits a marked change in performance;

E. The component has been dropped or the enclosure has been damaged.

DO NOT ATTEMPT SERVICING OF THIS UNIT-YOURSELF. REFER SERVICING

TO QUALIFIED AMR SERVICE PERSONNEL

Upon completion of any servicing or repairs, request the service point's assurance that only AMR Authorised Replacement Parts with the same characteristics as the original parts have been used, and that the routine safety checks have been performed to guarantee that the component is in a safe operating condition.

REPLACEMENT WITH UNAUTHORIZED PARTS MAY RESULT IN FIRE,

ELECTRIC SHOCK OR OTHER HAZARDS

Precautions

This component has been tested and found to comply with the limits set out in the EMC Directive using a connection cable shorter than 3 metres.

On power sources

The mains power cable should be routed so that it is not likely to be walked on or pinched, especially near the plug or back panel receptacle.

The component should not be disconnected from the AC power source as long as it is connected to the wall outlet, even if the component itself has been turned off.

If this component is not going to be used for a long time, be sure to disconnect the component from the wall outlet. To disconnect the AC power cable, grasp the plug itself; never pull the cable.

On placement

With a total of 2 thermionic electron valves, the AM-77 may become warm during operation. This is normal. Given this, it is imperative that the AM-77 when installed, its location or position DOES NOT interfere with its proper ventilation.

For example, it should not be situated on a bed, sofa, rug or similar surface that may block the top or bottom ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet, that may impede the flow of air through its top and bottom ventilation openings.

Do not place the component in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.

Do not place the component in an inclined position. It is designed to be operated in a horizontal position only.

Keep the component and compact discs away from equipment with strong magnets, such as microwave ovens or large loudspeakers.

Do not place heavy objects on the component.

To prevent fire or shock hazard, do not place vessels filled with liquids, such as vases, on the component.

Touch-Sensitive Buttons

On the front fascia of this AMR component are touch-sensitive buttons. Due to the wide variance of climes around the world, instances may arise where to activate a button:

- the touching finger may be required to be in contact with both the button and the front fascia to register;

- the touching finger may have to touch the chassis to discharge any static electricity prior to button selection.

Running-In

AMR estimates that the AM-77 may take between 300-500 operating hours for all of the internal components to be fully-broken in. Hence, please anticipate the sonic performance of the AM-77 to settle only after it has been used for this approximate length of time.

Stand-By

Please note that the solid state section needs to find its equilibrium and due to the (unavoidable) use of electrolytic capacitors (and an effect called soakage) around 24-48 hours of “standby” (or operation) are required to stabilise performance. Hence, ‘standby’ does not shut down the solid-state sections, only the valves.

Contents

WARNINGS	**3**
Section 1 - Unpacking and Setup	**10**
1a. Unpacking	11
1b. Setup	12
Section 2 - Component Overview	**14**
2a. Start-Up	18
Section 3 - Advanced Features	**24**
3a. Labeling of Inputs and Setting Level Offset	24
3b. Setting Fixed Input Level	27
3c. OptiMains® Protection for Excessive Under/Over-Voltages	29
3d. OptiProtect® Speaker Overload Protection	30

Section 4 - System Configurations **31**
4a. OptiOperation® Different System Configurations 31
4b. Switching and Connection Diagrams for Different Modes 39

Section 5 - Additional Connectivity **50**
5a. Input for iPod/other portable music players 50
5b. ‘HiFi/Pro’ Switches for Balanced XLR inputs 51
5c. RS232 ‘Options’ Connector 52

Section 6 - Technical Features **53**

Appendix - Troubleshooting 54

Specifications 55
Notes 57

Figure 1.1 - Front Panel of the AM-77

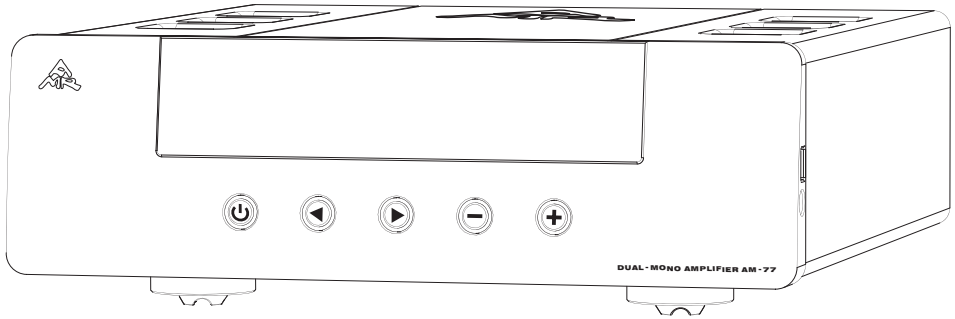
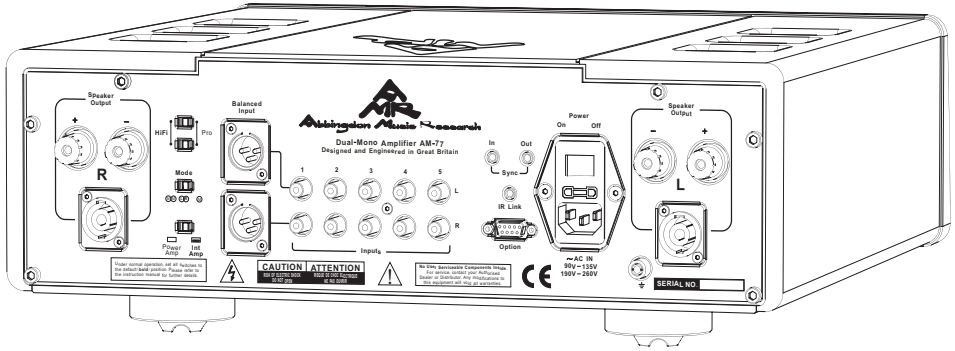


Figure 1.2 - Rear Panel of the AM-77



Thank you for purchasing this AMR reference class component.

We hope you derive as much pleasure from using this component as we have enjoyed making it for you.

1a. Unpacking

This section refers to the unpacking of the AM-77 and its subsequent setup.

Upon unpacking, please find:

Please that check all contents are present

i. AM-77 Reference Class Dual-Mono Pre-Main Amplifier.
ii. RC-77 Remote Commander (with 2 x AAA batteries).
iii. PC-77 OptiLink® *Reference mains power cable.*
iv. IC-77 OptiLink® *Reference interconnect cable (XLR-type).*
v. Synchronisation (3.5mm jack) cable (for linking-up multiple AM-77s).
vi. AM-77 Owner's Manual.
vii. Quick-Start Card.
viii. AMR Warranty Card.
ix. Aluminium professional flightcase.

Please ensure that all items are present. Should an item be missing, please contact your AMR distributor/dealer.

1b. Setup

Pre-Main Stereo Amplifier Connection

Default pre-main mode: the AM-77 as an integrated amplifier

The following diagrams illustrate the standard connection of the AM-77 in pre-main stereo amplifier mode. This is the default factory setting and is suitable for the majority of audio systems. Figure 1.3 depicts the use of standard banana/spade speaker connectors while figure 1.4 illustrates the use of Speakon connectors.

Figure 1.3 - System connection using banana plug/spade connector equipped speaker cables

Warning: ensure no speaker connector is in contact with the chassis to cause a short-circuit!

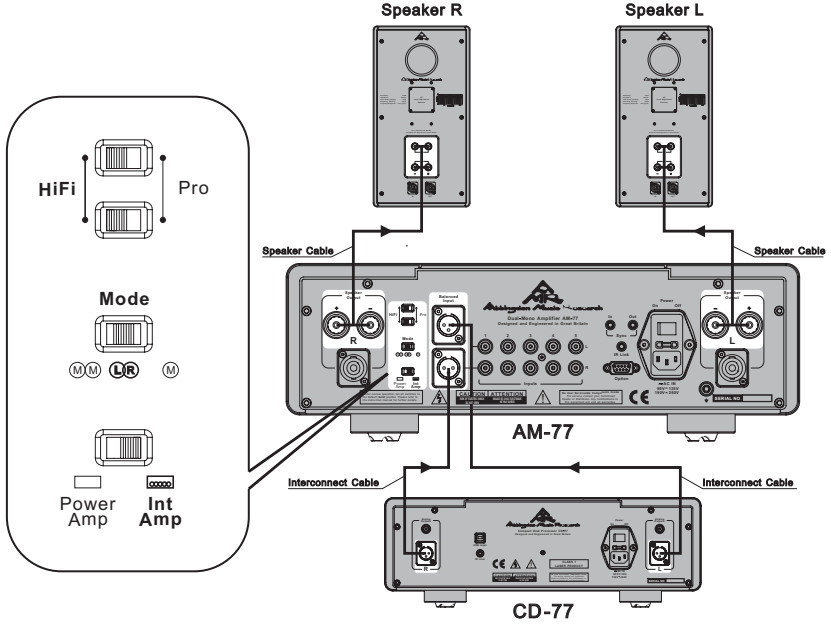
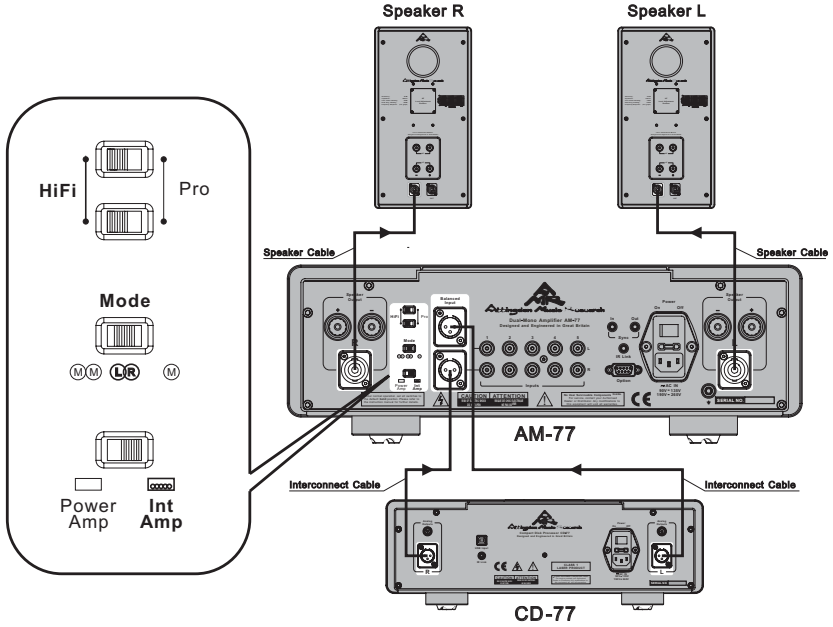


Figure 1.4 - System connection using Speakon connector equipped speaker cables

AMR recommends the sonically superior Speakon connectors



i. Connect the respective spade/banana/Speakon connectors of the speaker cables to the AM-77.

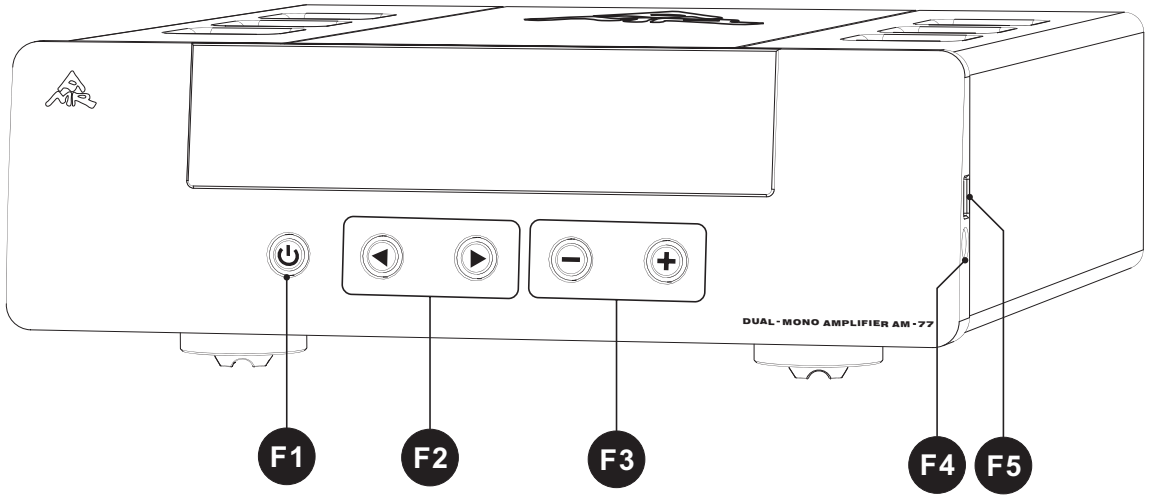
ii. Connect the source/s via the respective left and right XLR or RCA connectors to Inputs 1-5.

iii. Connect the IEC of the PC-77 mains power cable to the AM-77 and the socket to a mains source.

Section 2 - Component Overview

Figure 2.1 - AM-77 Front Fascia

The plastic protective film covering the display may be removed



F1. STANDBY switch: to place the AM-77 in active or standby mode.

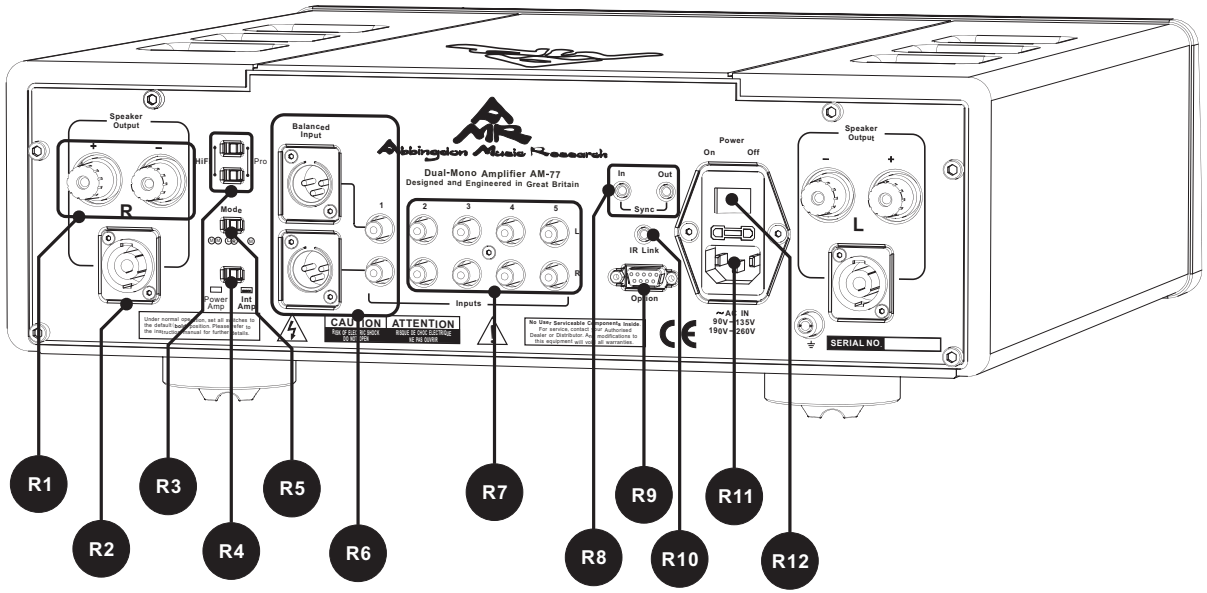
F2. SOURCE selection buttons: to select between the 5 different inputs.

F3. VOLUME buttons: to adjust the volume level.

F4. iPod 3.5 Input Connector: for the connection of an iPod or similar portable music device.

F5. iPod USB charging connector: for re-charging an iPod or similar portable music device.

Figure 2.2 - AM-77 Rear Panel



***Warning**: if a speaker connector touches the chassis, a short-circuit will occur!*

R1. SPADE/BANANA outputs: for connection of standard termination speaker cables.

R2. SPEAKON outputs: for connection of Speakon terminated speaker cables.

R3. HIFI/PRO switch: to allow for a source with transformer balanced output.*

R4. INT/POWER Amp switch: to alternate between Pre-Main/Monoblock/Bi-Amplification setings.*

R5. MODE switch: to alternate between Pre-Main/Monoblock/Bi-Amplification settings.*

R6. INPUT 1: shared XLR and RCA input, for signal input of source equipment.

R7. INPUTS 2-5: RCA inputs, for signal input of source equipment.

R8. SYNC connectors: for connection of more than one AM-77.*

R9. RS232 option connector: to facilitate future upgrades.*

R10. IR Connector: for connection of wireline remote control.

R11. IEC power connector: for the connection of an AC mains power cable to the AM-77.

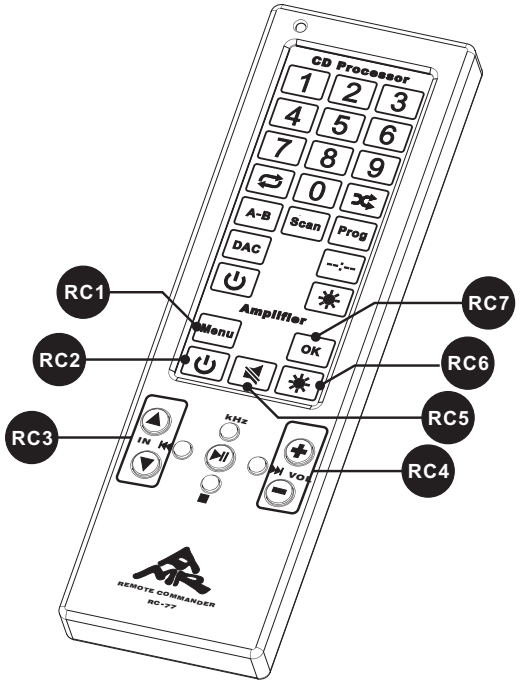
R12. POWER Switch: to switch on mains electricity to the AM-77.

In the majority of audio systems, the AM-77 is most likely to be operated as a Pre-Main Amplifier: please inspect the rear panel of the AM-77 to verify that the default settings (in bold) to enable the AM-77 to operate in this mode are as follows:

1. *HIFI/PRO switches are set to 'HiFi' (left position)*
2. *MODE switch is set to 'LR' (middle position)*
3. *INT/POWER switch is set to 'Int' (right position)*

* Please refer to Sections 3 - 5 for a more detail explanation.

Figure 2.3 - RC-77 Remote Control



RC1. MENU button: to enter Advanced Features mode.*

RC2. STANDBY button: to place the AM-77 in active or standby mode.

RC3. SOURCE selection buttons: to select between the 5 different inputs.

RC4. VOLUME buttons: to adjust the volume level.

RC5. MUTE button: to Mute (temporarily turn off sound) the AM-77.

RC6. BRIGHTNESS button: to adjust brightness levels.*

RC7. OK button: to be used in Advanced Features mode.*

* Please refer to Section 3 - Advanced Features section for more details

RC-77: battery installation

To install the 2 x AAA batteries, using a Philips screwdriver, remove the four screws at the four corners of the rear battery compartment.

Install the 2 x AAA batteries in the correct direction according to the baseplate inside the battery compartment.

Replace the battery compartment and the four cover screws.

‘All the Music Recreated’

2a. Start-Up

1. Power On/Off

Press the 'POWER' rocker switch (R12) at the rear of the AMP to switch on mains power to the AM-77.

Once powered OFF: always wait 20 seconds before switching on again

To switch the mains power OFF, press again and release. **Always WAIT at least 20 seconds** before switching ON again. This is to enable the *OptiMains*® circuit to shutdown properly.

The display will light up to indicate the unit is switched on and ready for use. This should take just under 1 minute as the *OptiMains*® circuit is verifying and the AM-77 is warming up.

The display should flash the message:

```
Optimising  Supply
    Voltage
```

The display will look like this:

```
    Warming  Up
    Please  Wait
```

The display will then show the remaining warm-up time.

Once the system check is complete and the *OptiMains*®circuitry has completed its initiation process, the AM-77 is ready for operation.

2. Standby

By pressing this button again, the AM-77 will initiate the warm-up mode to prepare for operation.

S t a n d b y

3. Source Selection

From either the front fascia of the AM-77 (F2) or the RC-77 (RC3), select the desired source input for playback.

C D P l a y e r – 3 6 d B

With PLAY selected from a connected source such as a CD-77, playback is attained.

Beware: prolonged listening at high volume levels is likely to damage your hearing

4. Volume Adjustment

From either the front fascia of the AM-77 (F3) or the RC-77 (RC4), select the desired volume.

While adjusting volume levels, there is an audible “click” from AM-77 and the speakers. This is the normal operation of the relays within the *OptiLevel*® direct path precision volume control.

5. Rear Inputs

At the rear of the AM-77, there are 5 inputs for the connection of source components such as the CD-77 compact disk processor or a vinyl source.

Input 1 (R6) is of most consequence because first, while all 5 inputs can be connected via RCA only, Input 1 also allows for the optional connection of XLR connectors.

Second, in other configurations where the AM-77 is used in single-channel mode, all other inputs are defeated. Signal input is allowed only through the LEFT channel (white) of Input 1: via XLR or RCA (Please refer to *Section 4 - System Configurations* for a detailed explanation).

6. Speakon Outputs

At the rear of the AM-77 are Speakon female connectors (R2) to allow speaker cables terminated with Speakon male connectors to be connected to the AM-77.

7. Synch Connectors

At the rear of the AM-77 are Synchronisation ‘In’ and ‘Out’ connection points (R8). This is for the linking of multiple AM-77s for alternative system configurations. Please refer to *Section 4 - System Configurations* for a detailed explanation.

8. Mode switch

At the rear of the AM-77 the ‘Mode’ switch (R5) allows for the AM-77 to alternate between Stereo/Mono-block/Bi-Amplifier modes. Please refer to *Section 4 - System Configurations* for a detailed explanation.

9. Int/Power switch

At the rear of the AM-77, the ‘Int/Power’ switch (R4) enables the AM-77 to alternate between pre-main or power amplification modes. Please refer to *Section 4 - System Configurations* for a detailed explanation.

10. HiFi/Pro switch

At the rear of the AM-77, the ‘HiFi/Pro’ switch (R3) allows for a source with a transformer balanced output to be connected to the AM-77. Please refer to *Section 5 - Additional Connectivity* for a detailed explanation.

11. RS232 option connector

At the rear of the AM-77, the RS232 connector (R9) allows the AM-77 to be upgraded. Please refer to *Section 5 - Additional Connectivity* for a detailed explanation.

12. Remote Commander-77: Standby

Figure 2.3: RC 2

See Item 2. for details.

13. Remote Commander-77: Source

Figure 2.3: RC 3

See Item 3. for details.

14. Remote Commander-77: Volume

Figure 2.3: RC4

See Item 4. for details.

15. Remote Commander-77: Menu

Figure 2.3: RC 1

This enters the Advanced Menu system of the AM-77. Please refer to *Section 3 - Advanced Features* for a detailed explanation.

16. Remote Commander-77: OK

Figure 2.3: RC 7

This is for the confirmation of a desired selection within the Advanced Menu system of the AM-77. Please refer to *Section 3 - Advanced Features* for a detailed explanation.

17. Remote Commander-77: Mute

Figure 2.3: RC 5

During operation, this disengages the volume of the AM-77 and re-engages the volume if it is pressed again.

18. Remote Commander-77: Brightness

Figure 2.3: RC 6

This allows for the adjustment of the display's brightness at the front fascia of the AM-77. There are 4 different brightness settings including display off.

With its own isolated power supply, with the display ON or OFF, there is no sonic impact upon the AM-77.

Section 3 - Advanced Features

The following section provides instructions to access the AM-77's advanced features.

3a. Labeling of Inputs and Setting Level Offset

With the AM-77, in one process, it is possible to label each of the 5 inputs with a corresponding source and to set the respective level offset. This function is recommended only after ALL desired sources have been connected to the AM-77.

A list of available labels is shown overleaf in chronological order.

The main advantage of setting the level offset is that the volume level will change in real-time, so that the user may adjust the offset without the need for additional equipment. By using this function and selecting the desired level offset, one may 'match' the volume level of all inputs so that when switching between sources, the volume remains the same, thereby avoiding undesirable and potentially equipment-damaging noise levels.

For example:

```
Input 1 CD Player (2V output)     Offset: 0dB
Input 2 LP (1V output)            Offset: +6dB
Input 3 SACD Player (4V output)   Offset: -6dB
```

List of available inputs:

All types of sourcescatered for

1. Input X *(default)*
2. Aux I
3. Aux II
4. Aux III
5. CD Processor
6. D/A Processor
7. DVD Player
8. DVD Recorder
9. HD Recorder
10. HDTV
11. Home Theatre
12. iPod
13. LCD TV
14. Media Center
15. MP3 Player
16. PC Audio
17. Phono Stage
18. Plasma TV
19. Pre-Amplifier
20. SACD Player
21. Tape Deck
22. Television
23. Tuner
24. Turntable
25. Uni Player
26. Video Player
27. Home Theatre Direct

The following steps outline the procedure to label all the inputs and set the respective level offset.

The AM-77's default labelling of its inputs starts from 'Input 1' and runs through to 'Input 5':

i. Press 'MENU' (RC1) on the RC-77.

ii. The display will flash 'Labelling Input 1'.

iii. The 2nd line of the display will commence with the first from a list of input labels (please see the previous page for a list of input labels).

iv. Scroll using the '+/- buttons' of the Volume (RC4).

iv. At the desired label, press 'OK' (RC7) to store the new label for that specific input.

v. The display will flash 'Level Offset'. Select the desired level, press 'OK' (RC7).

vi. The display will move onto 'Labelling Input 2'.

vi. Repeat this process for the other inputs.

vii. One the last input, Input 5 has been programmed, press 'OK'.

viii. Normal operation will resume at Input 5. If this is not the desired input, use SOURCE (F2) or (RC3) to select the input of choice to resume listening.

3b. Setting Fixed Input Level

When using the AM-77 as part of a home theatre system with an external processor controlling the overall system volume, it is possible to program one of the five input sources to have a fixed level of Input such as for a home theatre system of either 0.775V (0dbu) or 1.55V (+6dbu). This allows the 2-Channel music system to be seamlessly integrated into a high performance multi-channel home cinema system.

- Go to 3a and follow the instructions to select the last label:

```
Home Theatre
     Direct
```

- Simultaneously press '-' volume on the front fascia of the AM-77 and 'OK' on the RC-77.

- Having entered the ‘Fixed Input’ menu, now select:

HTD mode: always use an external pre-amp as this mode will switch to full volume!

Fixed Input 1.55V = +6dBu

or

Fixed Input 0.775V = 0dBu

Warning! By selecting Home Theater Direct mode, the volume of the amplifier will be switched to full. Hence if it is used incorrectly, it will damage the connecting speakers. AMR assumes no responsibility for any speaker damage arising from the use of the AM-77.

3c. *OptiMains*® Protection for Excessive Under/Over-Voltages

The AM-77 is fitted with the *OptiMains*® system to condition and adjust the incoming mains supply for best operation under all normal mains conditions (including situations that will cause audible problems without *OptiMains*®).

Sometimes there are excessive mains fluctuations

In almost every country throughout the world, instances do arise where fluctuations in the main electricity exceeds that of a correctly operating mains supply and any electrical item/product is no longer properly served. In the case of extreme power surges, brown outs or other exceptional/unexpected conditions that exceed the safety margins, the *OptiMains*® system automatically will switch off the mains power to the internal parts of equipment to prevent any damage from occuring.

If the display reads:

If there are any questions, please contact your nearest AMR distributor/dealer.

```
AC  Voltage  Outside
Operating  Range!
```

Power OFF your AMR component and wait at least 5 minutes. If and when the mains electricity has been deemed to have returned to normal (such as during a brown out and the lights have dimmed but have returned to normal brightness) then power up your AMR component as per the manual's instructions.

3d. *OptiProtect*® Speaker Overload Protection

Within *OptiProtect*® the AM-77 has an in-built speaker protection circuit. Unlike common protection systems which are in series with the speaker output and where the music signal always passes through the protection circuit, the AMR speaker protection system acts as a crowbar circuit shorting across the output - hence it is separate from the audio circuitry and does not affect the sound quality unless it is engaged.

This is mainly a final safeguard against equipment failure and/or extreme levels of over-driving the amplifier and speakers. When the display shows:

S p e a k e r P r o t e c t i o n

E n g a g e d !

If there are any questions, please contact your nearest AMR distributor/dealer

This indicates that the AM-77 has detected an output condition that could potentially damage the speakers connected to it.

Normally switching the AM-77 off, waiting 20 seconds and switching it back on will reset the protection circuit if the cause was for example, excessive signal levels. In the extremely rare event that an internal malfunction of the AM-77 is the cause for the protection circuit to engage, the protection will re-engage on switch-on, indicating the need for the AM-77 to be serviced.

Section 4 - System Configurations

4a. OptiOperation® Different System Configurations

It is assumed all prior sections have been read & understood with all requisite connections made

In keeping with AMR's philosophy that 'no one sound fits all' the AM-77 is also adaptable to suit virtually any system configuration: able to operate at one end, as a pre-main stereo amplifier and at the other, as a single-channel power amplifier. In pre-main amplifier mode, the AM-77 will use both the pre- and power amplification sections: the AM-77 controls volume level and input selection controls. In power amplification mode, the AM-77 wil require an external, separate pre-amplifier to handle volume and input selection duties.

The following section describes alternative configurations for the AM-77 beyond the factory default: pre-main stereo amplifier setting. With diverse system permutations in mind, the AM-77 has built-in, six *OptiOperation*® modes to seamlessly integrate it into virtually any audio system configuration:

Six different modes

Mode I. Pre-Main Stereo amplifier mode (default)
Mode II. Pre-Main Monoblock amplifier mode
Mode III. Pre-Main Bi-amplifier mode (horizontal biamping)
Mode IV. Power amplifier Stereo mode
Mode V. Power amplifier Monoblock mode
Mode VI. Power Bi-amplifier mode (horizontal biamping)

Supreme adapt-ability

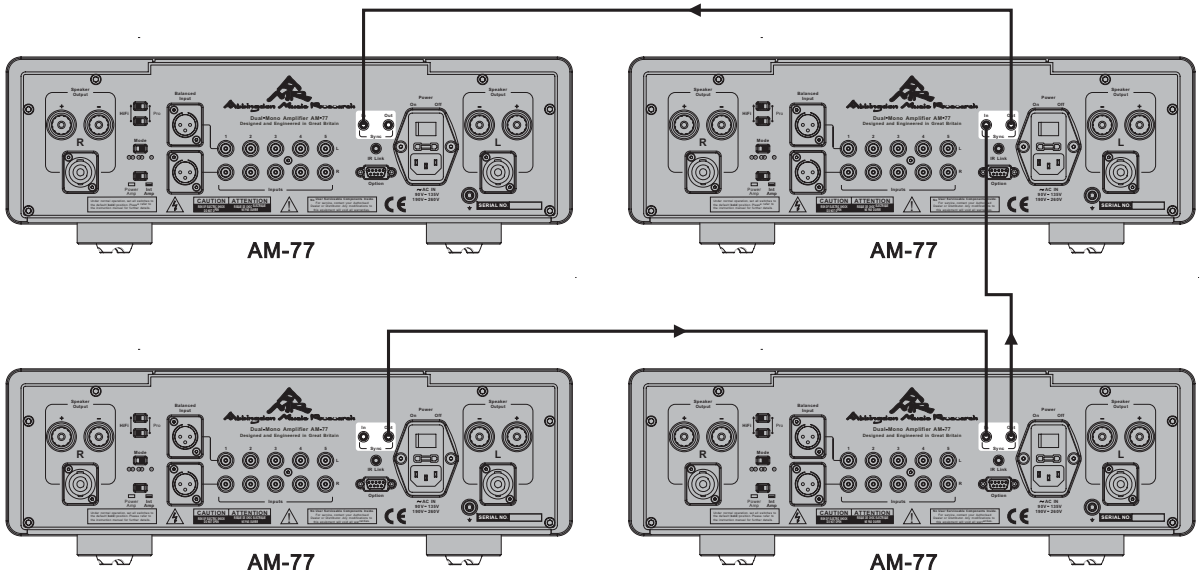
The combination of synchronising multiple AM-77s together in practical terms is limited only by room size and cost. This approach allows for systems at the core, comprising of *any* number of AM-77s to be constructed to *any* level of complexity.

In short, the AM-77's flexibility is limited only to that of the imagination. For example, one may employ:

- *3xAM-77s synchronised along with a high-quality digital crossover to drive a fully-active 3-way speaker system to the highest possible level of sound reproduction or;*
- *3xAM-77s synchronised for a multi-channel surround sound system or;*
- *2xAM-77s synchronised in monoblock or bi-amplification mode to drive suitably-equipped speakers.*

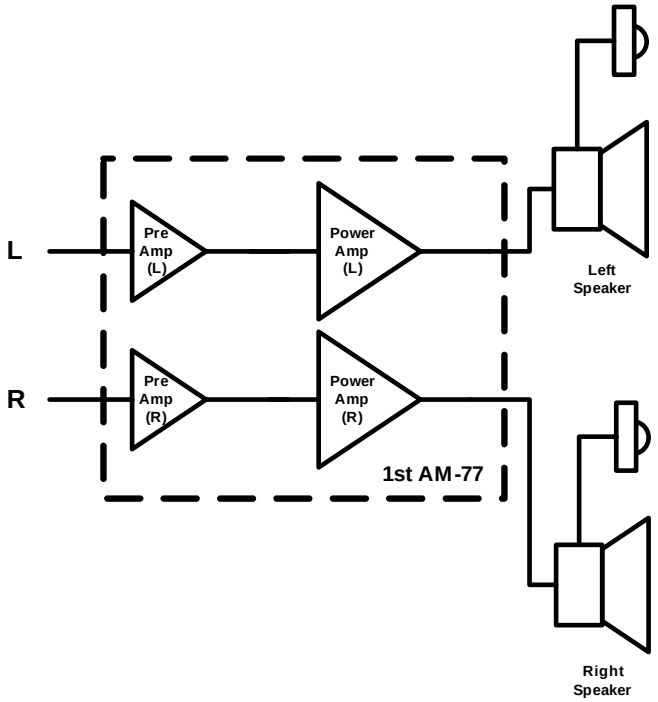
Figure 4.0 - Connection of more than one AM-77

Before an alternative configuration is selected, always first ensure power to the AM-77 is OFF



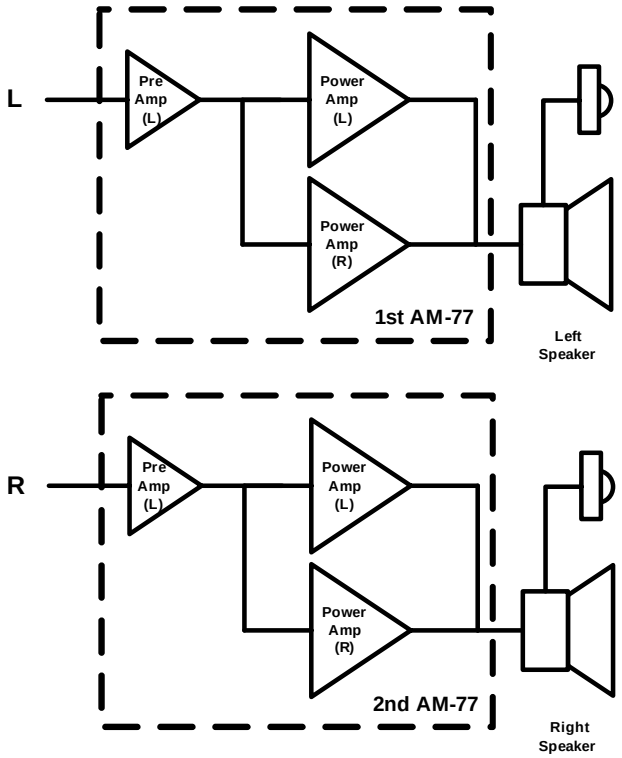
The following pages provide an outline of the theoretical wiring system behind each of the six different configurations with a brief accompanying summary

Figure 4.1 - Mode I: Pre-Main Stereo



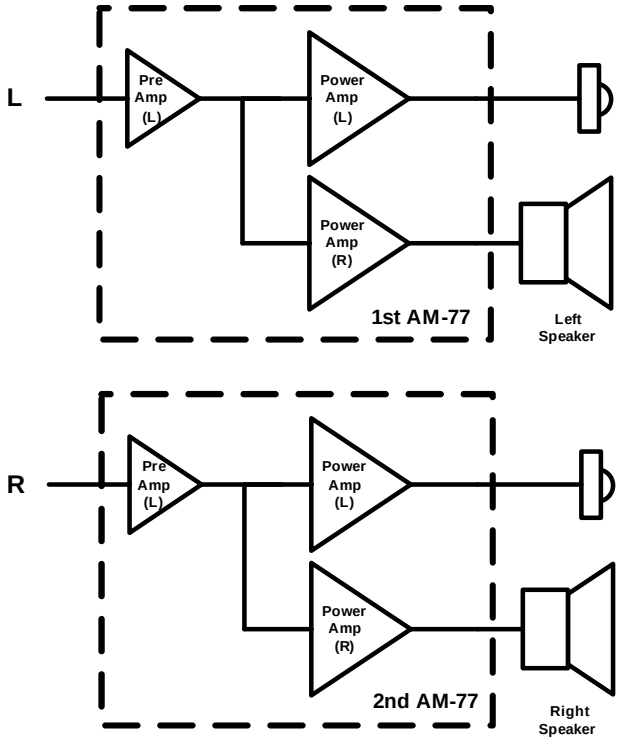
- Standard system with AM-77 as the only amplifier.

Figure 4.2 - Mode II: Pre-Main Monoblock



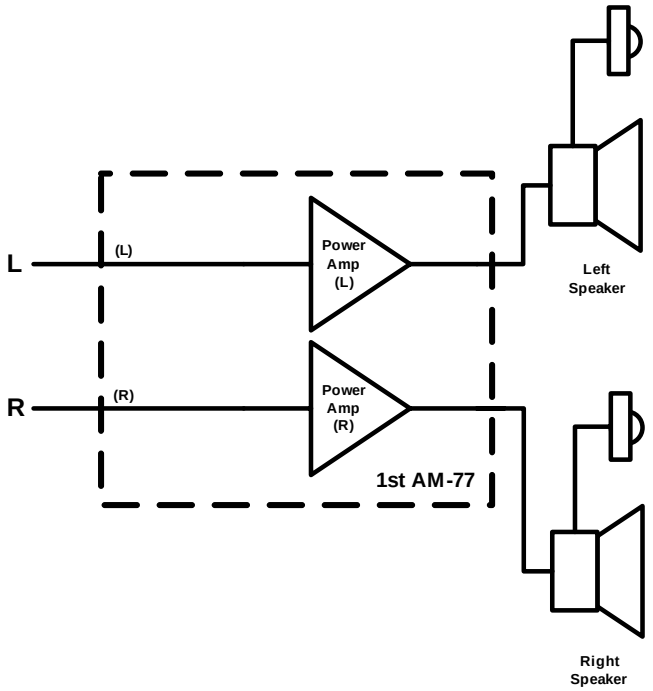
- Need 2 or more AM-77s.
- Drive low impedance speakers that only have one set of terminal connections.
- ~600W/2Ohm RMS and ~300W/1Ohm RMS without current clipping. This is best suited to drive very low impedance speakers (Apogee Diva et al).

Figure 4.3 - Mode III: Pre-Main Bi-Amplifier



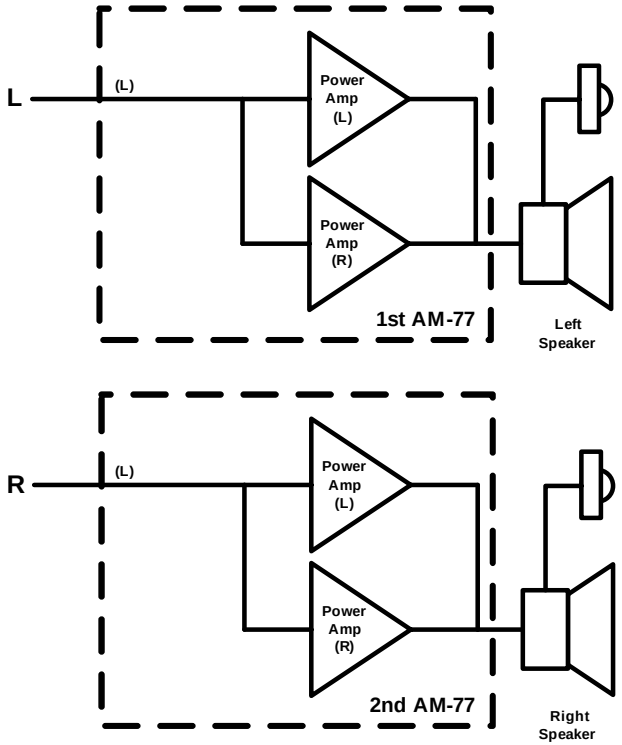
- Need 2 or more AM-77s.
- Drive speakers that have more than one set of terminal connections with improved performance and dynamic range.
- Virtually all the power supply power is availa ble to the low frequency channel with improved channel separation.

Figure 4.4 - Mode IV: Power Stereo



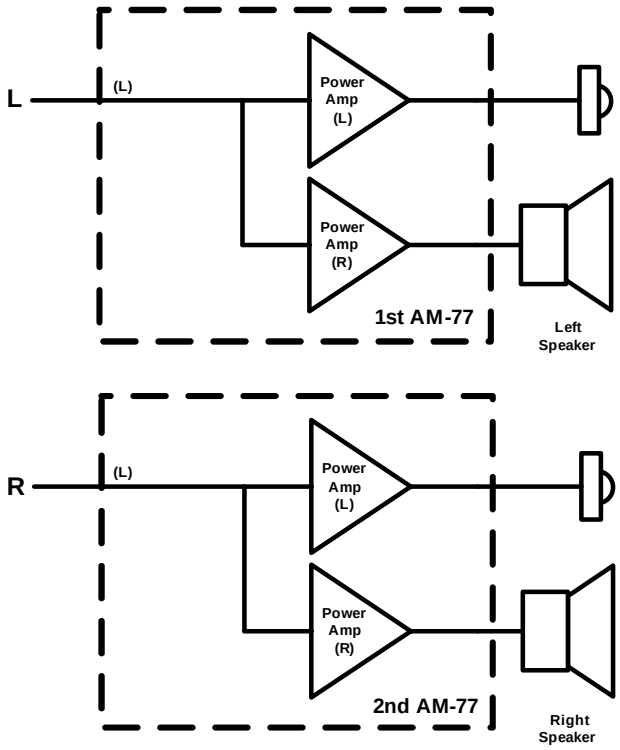
- Same as Mode I, except the Pre-Amplifier sec tion has been bypassed.
- A separate pre-amplifier is needed to control the volume.

Figure 4.5 - Mode V: Power Monoblock



- Same as Mode II, except the Pre-Amplifier sec tion has been bypassed.
- A separate pre-amplifier is needed to control the volume.

Figure 4.6 - Mode VI: Power Bi-Amplifier



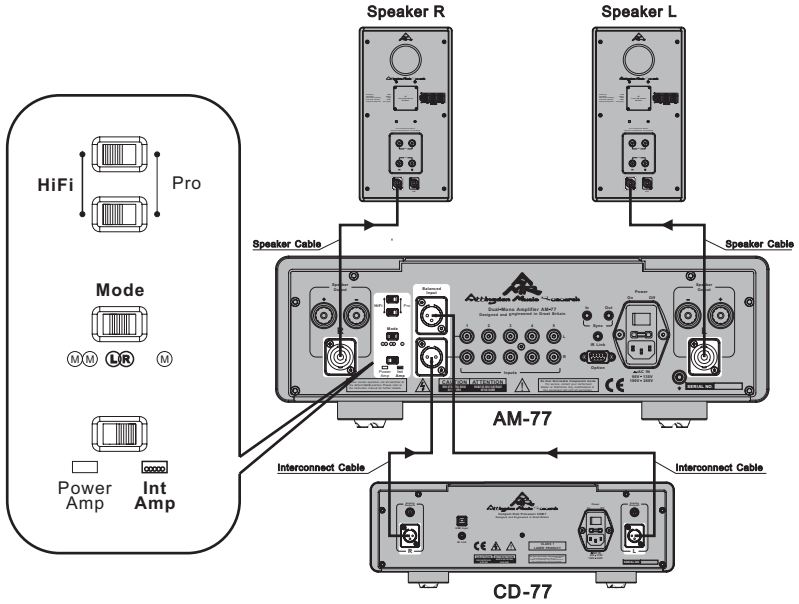
- Same as Mode III, except the Pre-Amplifier sec tion has been bypassed.
- A separate pre-amplifier is needed to control the volume.

4b. Switching and Connection Diagrams for Different Modes

The following is a description of the switch settings and connections required to engage the various modes.

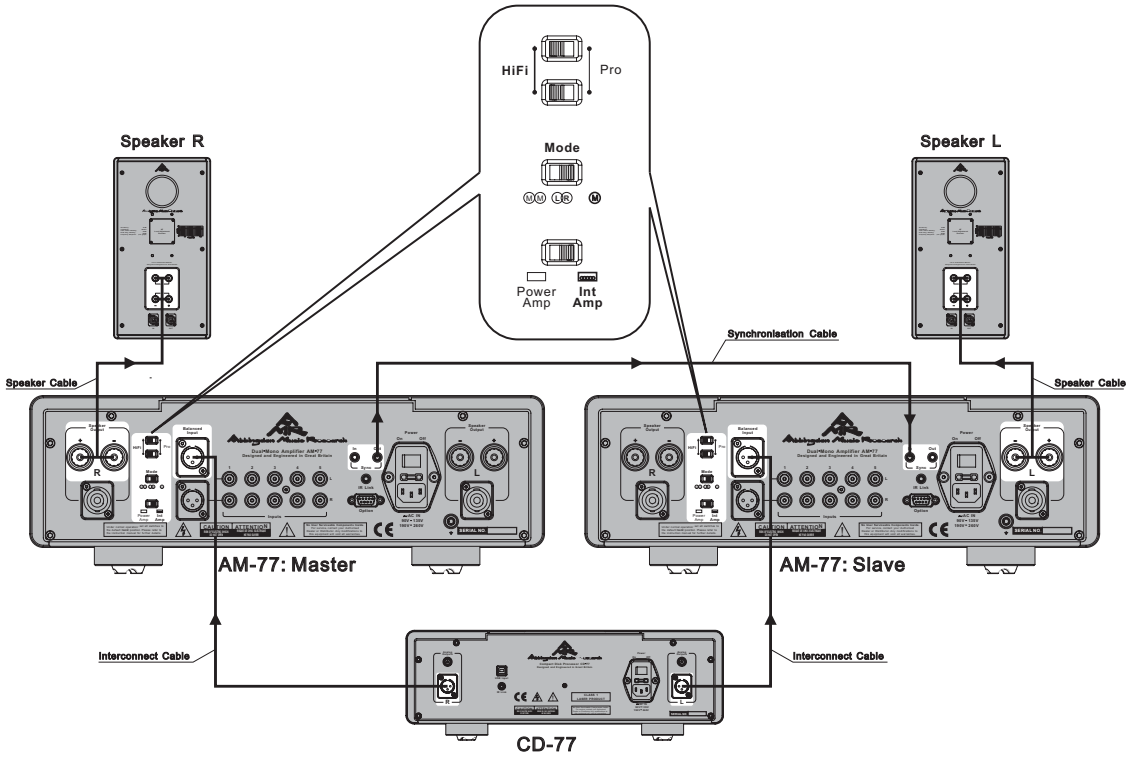
Figure 4.7 - Mode I: Pre-Main Stereo amplifier (default)

The default factory setting



This is the factory default setting: the connection for which has been described in detail in *Section 1 - Unpacking and Setup*. We have illustrated the default switch positions here for ease of reference to re-configure from an alternative system setup back to the pre-main stereo amplifier mode.

Figure 4.8 - Mode II: Pre-Main Monoblock amplifier



Note: This function requires at least 2 x AM-77 synchronised pre-main amplifiers.

i. Power OFF via the 'POWER' (R12) mains switch at the rear of both AM-77s.

ii. Connect the cable from the 'Sync Out' connector (R8) of the 'master' amplifier to the 'Sync In' connector (R8) of the 'slave' amplifier. The amplifier with the cable connected to 'Sync In' becomes 'slaved' to the other and will automatically follow the 'master' AM-77.

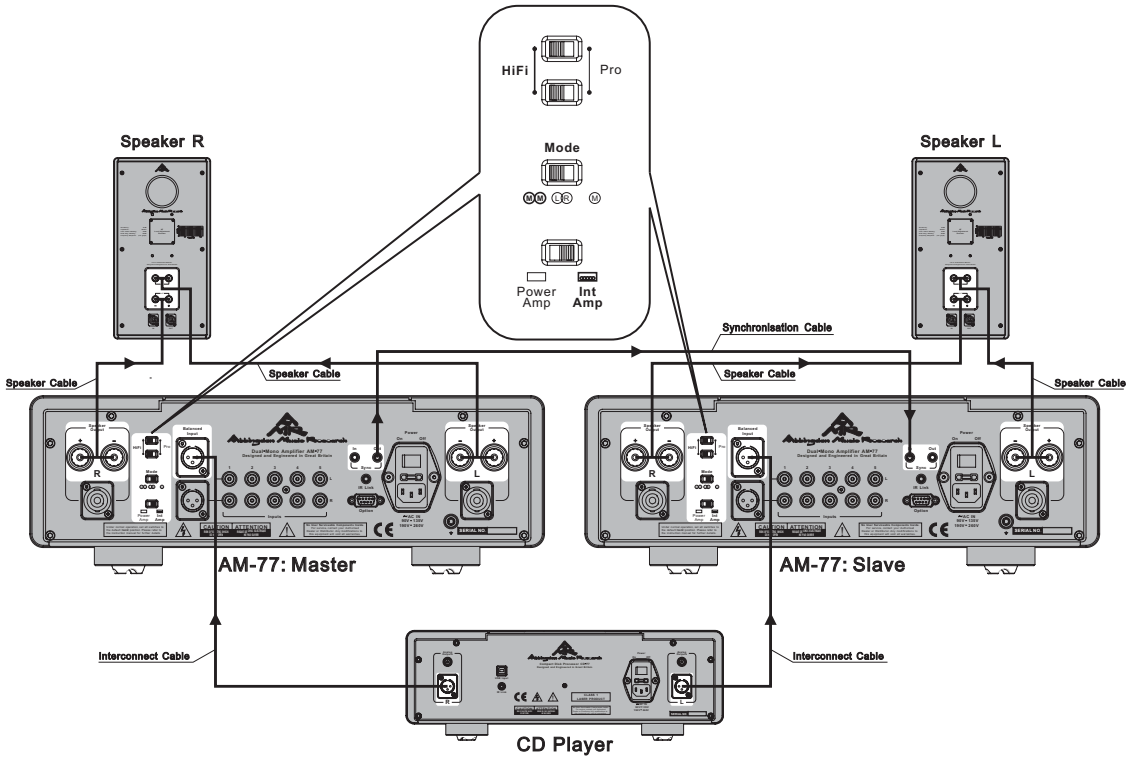
iii Using a small flat blade screwdriver, move the 'MODE' switch (R5) to the left to select 'M'.

iv. Using a small flat blade screwdriver, move the 'INT/POWER AMP' switch (R4) to the right to select 'INT AMP'.

v. Repeat this process for the other AM-77.

vi. Power both AM-77s back on via the 'POWER' switch (R12).

Figure 4.8 - Mode III: Pre-Main Bi-amplifier (horizontal bi-amping)



Note: This function requires at least 2 x AM-77 synchronised pre-main amplifiers.

i. Power OFF via the 'POWER' (R12) mains switch at the rear of both AM-77s.

ii. Connect the cable from the 'Sync Out' connector (R8) of the 'master' amplifier to the 'Sync In' connector (R8) of the 'slave' amplifier. The amplifier with the cable connected to 'Sync In' becomes 'slaved' to the other and will automatically follow the 'master' AM-77.

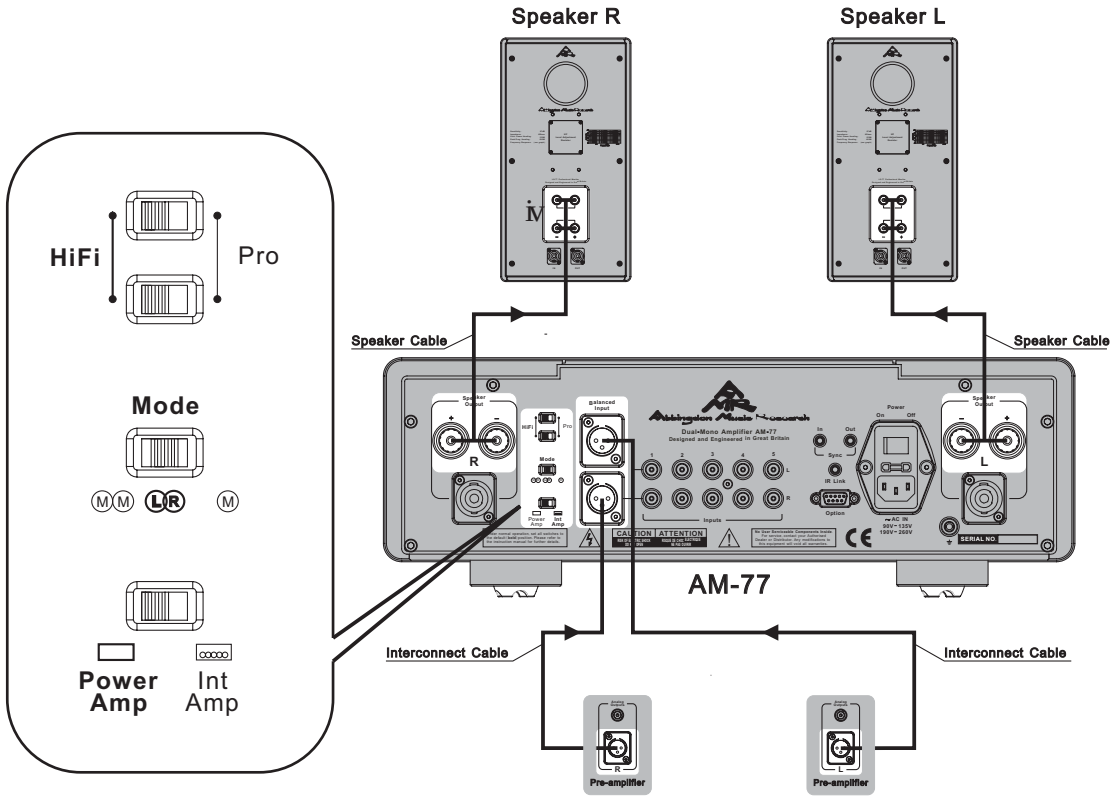
iii. Using a small flat blade screwdriver, move the 'MODE' switch (R5) to the right to select 'MM'.

iv. Using a small flat blade screwdriver, move the 'INT/POWER AMP' switch (R4) to the right to select 'INT AMP'.

v. Repeat this process for the other AM-77

vi. Power both AM-77s back on via the 'POWER' switch (R12).

Figure 4.9 - Mode IV: Power Stereo amplifier



i. Power OFF via the 'POWER' (R12) switch at the rear of the AM-77.

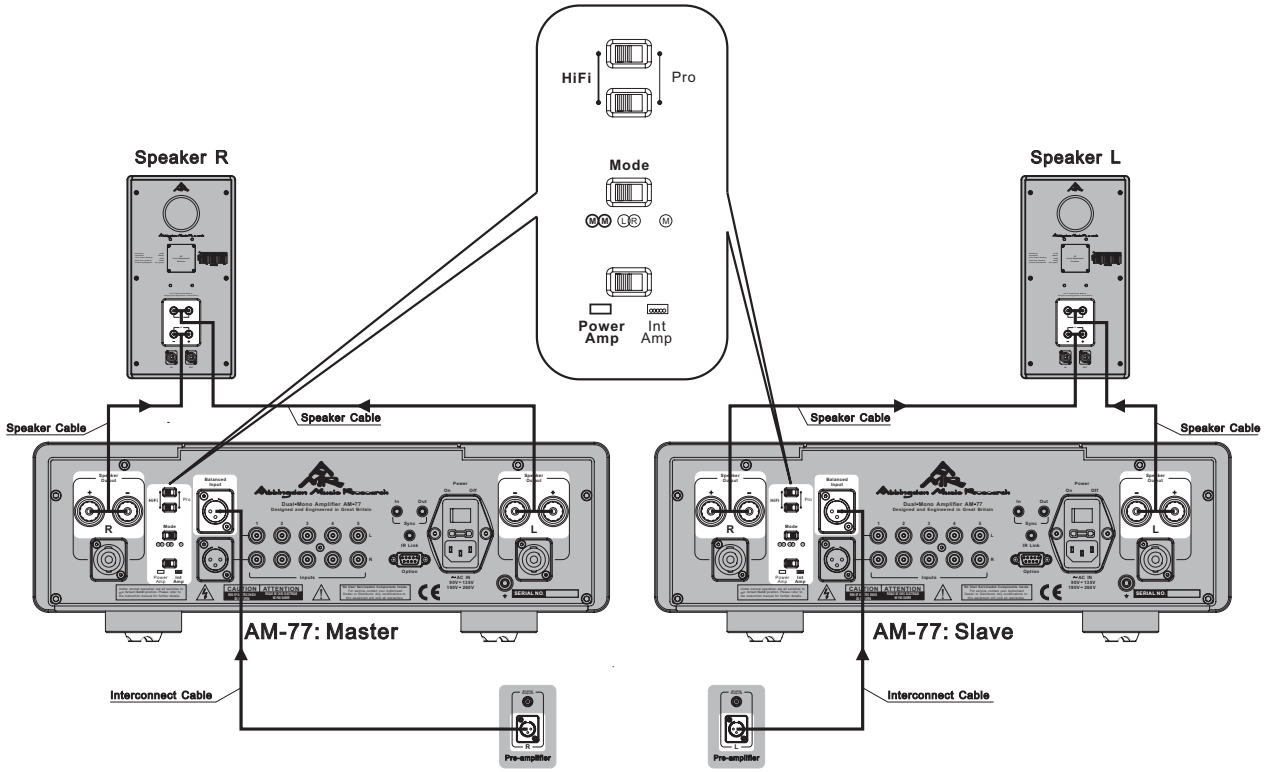
ii. Connect the desired separate pre-amplifier to the AM-77 via the Balanced or RCA female connector of Input 1 (R6).

iii. Using a small flat blade screwdriver, move the 'MODE' switch (R5) to the centre to select 'L R'.

iv. Using a small flat blade screwdriver, move the 'INT/POWER AMP' switch (R4) to the left to select 'POWER AMP'.

v. Power the AM-77 back on via the 'POWER' switch (R12).

Figure 4.9 - Mode V: Power Monoblock amplifier



Note: This function requires at least 2 x AM-77 synchronised pre-main amplifiers.

i. Power OFF via the 'POWER' (R12) switch at the rear of both AM-77s.

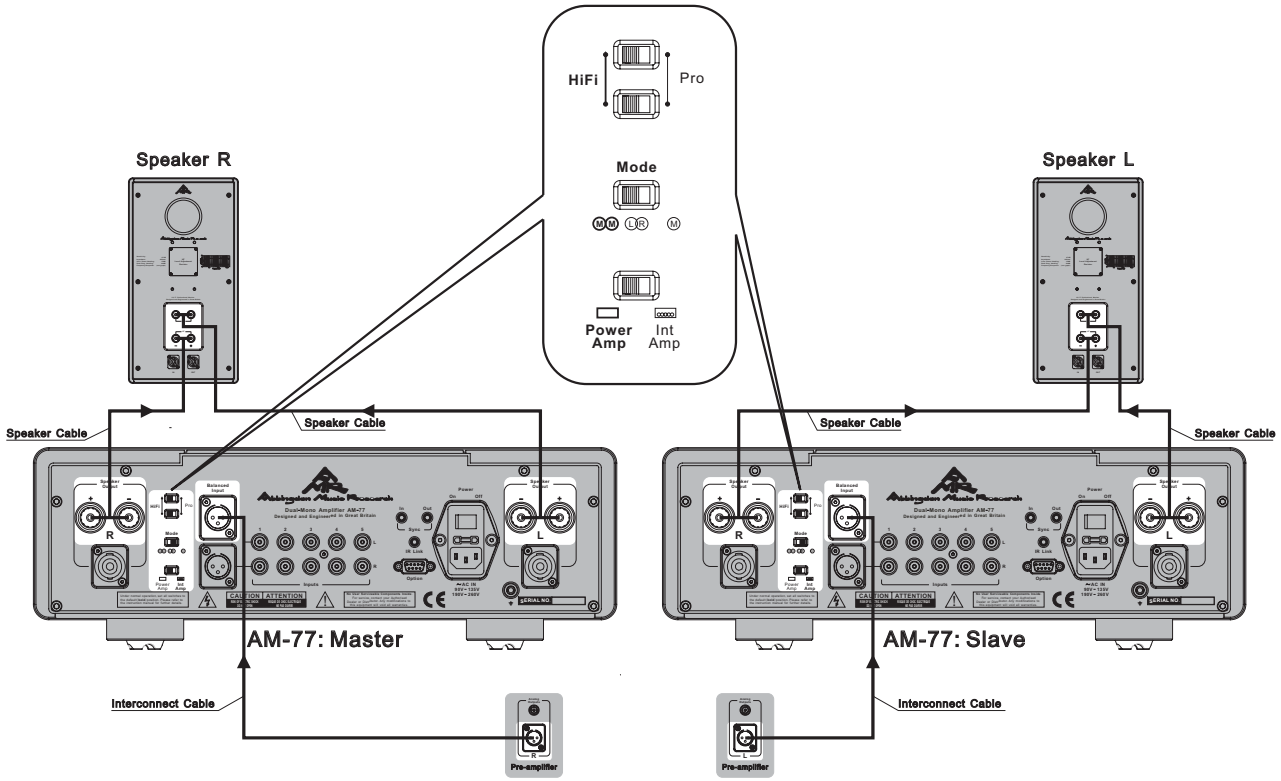
ii. Using a small flat blade screwdriver, move the 'MODE' switch (R5) to the left to select 'M'.

iii. Using a small flat blade screwdriver, move the 'INT/POWER AMP' switch (R4) to the left to select 'POWER AMP'.

iv. Repeat this process for the other AM-77.

v. Power ON both AM-77s via the respective 'POWER' switch (R12).

Figure 5.0 - Mode VI: Power Bi-amplifier mode



Note: This function requires at least 2 x AM-77 synchronised pre-main amplifiers.

i. Power OFF via the 'POWER' (R12) switch at the rear of both AM-77s.

ii. Using a small flat blade screwdriver, move the 'MODE' switch (R5) to the left to select 'MM'.

iii. Using a small flat blade screwdriver, move the 'INT/POWER AMP' switch (R4) to the left to select 'POWER AMP'.

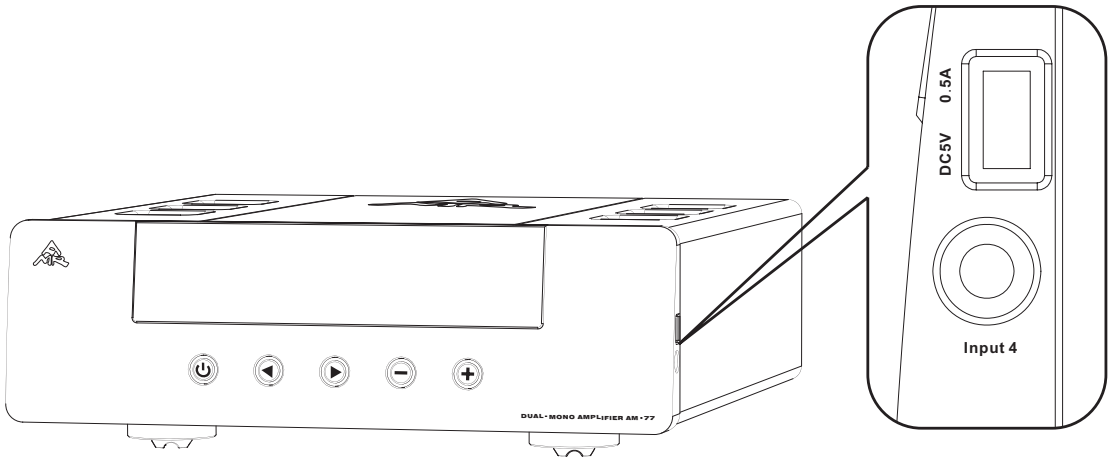
iv. Repeat this process for the other AM-77.

v. Power ON both AM-77s via the respective 'POWER' switch (R12).

Section 5 - Additional Connectivity

5a. Input for iPod/other portable music players

When the 3.5mm jack is used, disconnect the RCA connecion to Input 4 at the rear of the AM-77



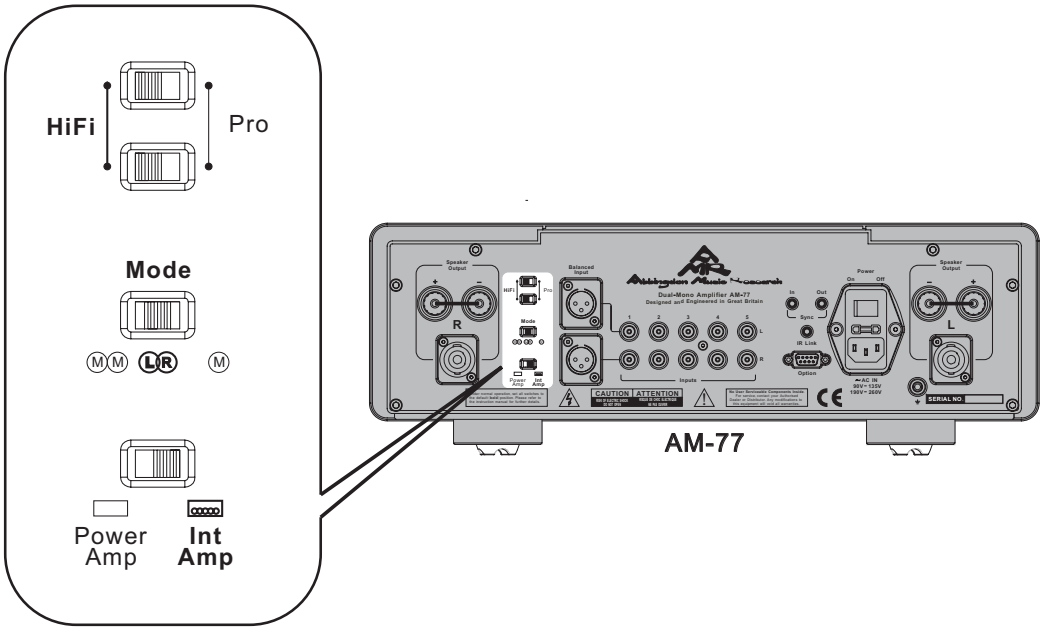
On the front right-side panel, there is a 3.5mm jack (F4). This is for the connection of an iPod or any other portable music device for music playback through this medium.

To select this source, change selection to Input 4 (dis-connect any RCA connection to Input 4 at the rear).

The USB connection (F5) is purely for supplying power to the iPod/other portable music device. It serves no other function.

5b. ‘HiFi/Pro’ Switches for Balanced XLR inputs

‘Pro’ switch is for the few pre-amplifiers that have floating transformer balanced outputs

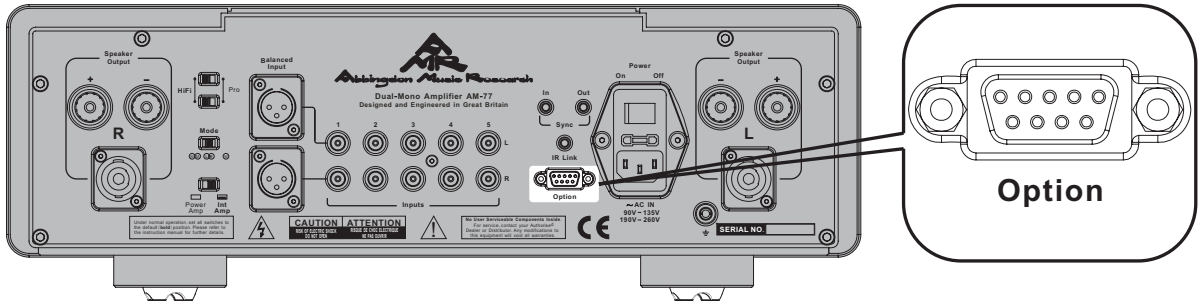


For the majority of sources, the HiFi/Pro switch (R3) is best left in the ‘HiFi’ position. However, if the source has a pro-audio style transformer balanced output, the HiFi/Pro switch needs to be set to ‘Pro’.

A transformer balanced output uses a floating secondary from an audio transformer: unlike electronic balanced outputs of any description, the signal is NOT referenced to ground (Pin 1). For such (rather rare) equipment, the ‘Pro’ switch is engaged to short-scircuit Pins 1 & 3, thus establishing the ground connection.

5c. RS232 ‘Options’ Connector

For future upgrades



The RS232 ‘Options’ connector port (R9) is for upgrading the functionality of the AM-77 in future. Contact your local AMR distributor/dealer for more detailed instructions.

Section 6 - Technical Features

The following section provides a brief explanation of the most salient technical features of the AM-77.

Circuit 'X'® is AMR's unique circuit: with NOS thermionic electron valves for voltage gain with a patent-pending error-cancellation circuit for the Class A matched bipolar output power devices.

OptiGain® inherently outperforms all conventional types of volume controls. At low as well at high volumes, the dynamic range is virtually unhindered to preserve every bit of minuscule information in the signal.

OptiOperation® modes offer unrivalled functionality and flexibility: one or more AM-77s can be synchronised to deliver the optimum level of quality and can be seamlessly integrated into home theatre setups.

OptiPower® supply circuit is completely free of regulators. This is an essential pre-cursor for subsequent thermionic electron valve circuits operating with no negative feedback.

OptiMains® is truly one of a kind as it will detect, monitor and adjust if necessary, the incoming voltage to ensure the correct voltage is *always* supplied to the relevant internal sub-sections.

OptiTrans®power supply transformers are advanced double C-Core types which sonically outclass traditional EI and toroidal transformers.

OptiSeal® is the galvanic sealing of functional sections in the transformer and includes the use of separate transformer windings to ensure that noise from one section does not contaminate adjacent sections in a full dual-mono audio circuit design.

For a more detailed explanation of these and other features, please go to: www.amr-audio.co.uk

Appendix - Troubleshooting

Figure A.1 Troubleshooting Guide

Symptom	Possible cause	Solution
With power ON no power is registered	• poor/no power plug connection at mains power point	• insert the power plug firmly into the AC
	• blown fuse at mains plug	• check and change mains plug fuse
No sound	• incorrect audio cable connections	• connect the sources to the AM-77 correctly
	• incorrect amplifier operation	• make sure that the input selector on the AM-77 is set to the desired source
Strange 'blast' sound	• check speaker connectors are not in contact with the chassis and 'short circuiting'	• adjust fitting between speaker and chassis connectors and terminal. Ensure no contact with the chassis
Remote control does not work	• remote control batteries have expired	• replace 2 x AAA batteries
	• object obscuring remote sensor on the AM-77, no 'line of sight'	• remove any objects directly in front of the AM-77
A 'humming' sound can be heard	• loose cable connections	
Front switches 'jump'/ enter Standby	• static electricity	• 'Touch' the chassis prior to pressing a sensor to dis charge. Then press the desired sensor
If other problems are experienced		• Revert to the manual and retrace the procedure

Specifications

Figure S.1 - Specifications Table

Inputs:	5 x RCA 1 x XLR Bal. shared with 1 RCA 1 x iPod® shared with 1 RCA
Volume Control:	-71dB – 0dB in 1dB steps + Mute
Input Sensitivity	(IHF 2.83V Out)/Impedance: < 0.05V / >20KOhm
Power Output (see Notes)	IHF Dynamic Power: 270 watts per channel at 8ohm FTC: 180 watts per channel at 8 ohm 180 watts per channel at 4 ohm
Output impedance:	0.5 ohm, 20-20,000 Hz
Frequency Response (-1dB):	10Hz - 50kHz
Signal-to-noise ratio 'A' weighted:	>100 dB
Operational Modes:	Pre-Main amplifier mode Power amplifier mode Monoblock option An unlimited number of AM-77s can synchronised

...continued

Power Transformer:	1200 VA Custom Double C-Core
Power consumption:	Standby: 50 W Power on: 95 W at rated output (4R): 1000 W
Power Supply Capacitance:	48,000uF per channel
Rated voltage:	90V-135V & 190V-260V AC
Colour:	Champagne or Titanium
Dimensions:	17.9in W by 6.2in H by 18.3in D 46cm W by 16cm H by 47cm D
Weight:	Amplifier: 99 lbs/ 45 kg Shipped: 114 lbs/ 52 kg

Information and specifications subject to change without notice.

Notes

At AMR we feel that the IHF standard represents the best available rigidly mandated and standardised, musically relevant measurements applicable today (in preference to DIN45500 among others) despite their formidable age and our wish for something more up-to-date, while the FTC mandated standard is applicable under like-for-like 'fair trade descriptions' requirements in the USA (but we feel what is fair in the USA is still fair elsewhere) to make sure that one maker's advertised 'watt' is like-for-like equal to that of another. As a result we feature IHF-based specifications and measurements where possible and FTC where mandated/appropriate.

i. FTC: Federal Trade Commission (USA)

Federal Trade Commission: a US-based trade standard body whose standardised measurement procedures (2000 revision) we apply where we would be required to do so under US Law, even though we are UK-based. Past the FTC ruling (originally from 1974, updated in 2003) derived rating there is a secondary power rating, the IHF 'Dynamic Power' (also defined in the mid 70's) which is the maximum power the amplifier can put out for a burst 20ms long, or in other words for a short musical peak. An amplifier that can deliver 200W for 20ms but 50W continuously will have a FTC Power Rating of 50W but an IHF Dynamic Power Rating of 200W. An amplifier that can deliver 200W for 2ms but 150W continuously will have a FTC Power Rating of 150W but an IHF Dynamic Power Rating of 200W. However, the available undistorted peak output with music signals is actually the same for both Amplifiers.

ii. IHF: Institute of High Fidelity

Institute of High Fidelity: a US-based standard body (now incorporated into the International Electrotechnical Commission) whose standardised measurements we usually apply. The Federal Trade Commission defines the information about an amplifier that a US manufacturer (or distributor) must provide. FTC ratings derive from test data, and state an amplifier's continuous average output capability into a defined load across a defined frequency range (usually 20Hz - 20kHz, but any range can be used as long as it is stated). Also, the amplifier is tested with 'both channels driven' (placing maximum strain on the power supply), so the test demonstrates its capacity in real-world conditions. This allows like-for-like comparison of amplifiers that use FTC ratings. For that reason, you won't find any published FTC ratings for an amplifier's output into a 2 Ohm load.